ABSTRAK

Layanan bimbingan akademik merupakan aktivitas penting di perguruan tinggi untuk membantu mahasiswa menyelesaikan permasalahan akademik. Namun, layanan ini sering mengalami kendala, seperti kurangnya sistem terintegrasi untuk pengaturan jadwal, pencatatan absensi, dan pengelolaan laporan. Penelitian ini bertujuan untuk merancang dan mengimplementasikan *Progressive Web Application* (PWA) layanan bimbingan akademik berbasis web dengan fitur-fitur yang memenuhi kebutuhan mahasiswa, dosen pembimbing akademik (PA), Kaprodi, dan admin di Fakultas Ilmu Komputer UPN Veteran Jakarta. Sistem dikembangkan menggunakan *framework Next.js* dan metode *Extreme Programming* (XP), yang memungkinkan pengembangan iteratif sesuai kebutuhan pengguna. Sebagai aplikasi PWA, sistem memberikan pengalaman seperti aplikasi *native*, termasuk kemudahan akses di berbagai perangkat. Pengujian menggunakan *User Acceptance Testing* (UAT) menunjukkan sistem diterima dengan baik karena memenuhi kebutuhan pengguna, sementara *Blackbox Testing* memastikan seluruh fungsi berjalan optimal tanpa kendala. Fitur utama sistem meliputi pengajuan bimbingan, jadwal kosong dosen PA, absensi, notifikasi *real-time*, laporan bimbingan, dan pengelolaan data oleh admin. Sistem ini mampu meningkatkan efektivitas komunikasi mahasiswa dengan dosen PA dan efisiensi administrasi fakultas. Dengan demikian, sistem ini diharapkan menjadi solusi digital inovatif untuk meningkatkan kualitas layanan bimbingan akademik di Fakultas Ilmu Komputer UPNVJ.

Kata Kunci: Sistem Bimbingan Akademik, *Extreme Programming*, *Next.js*, *Progressive Web Application*, Fakultas Ilmu Komputer UPNVJ.

ABSTRACT

Academic guidance services are vital in higher education to assist students in addressing academic challenges. However, these services often face issues such as the lack of an integrated system for managing schedules, recording attendance, and organizing reports. This study aims to design and implement a Progressive Web Application for academic guidance services tailored to meet the needs of students, academic advisors , program coordinators, and administrators at the Faculty of Computer Science, UPNVJ. Developed using the Next.js framework and the Extreme Programming methodology, the system allows iterative and flexible development aligned with user needs. As a PWA, the system offers a native app-like experience, ensuring accessibility across devices. Testing through User Acceptance Testing showed the system was well-received by all users as it met their needs, while Blackbox Testing confirmed that all functions operated optimally without errors. Key features include guidance request submissions, advisor schedule management, attendance recording, real-time notifications, report management, and administrative data handling. By improving communication between students and advisors and optimizing administrative processes, this system is expected to be an innovative digital solution that enhances the quality of academic guidance services at the Faculty of Computer Science, UPNVJ.

Keywords: *Counseling Guidance System, Extreme Programming, Next.js, Progressive Web Application, Faculty of Computer Science UPNVJ.*